



**Carnegie Mellon
Software Engineering Institute**

Pittsburgh, PA 15213-3890

CMMI Appraisal Results

SEPG 2003
February 25, 2003

Dave Zubrow
Software Engineering Institute

SM SCAMPI, SCAMPI Lead Appraiser, SEPG, and SEI are service marks of Carnegie Mellon University.

® CMMI, Capability Maturity Model, and CMM are registered in the U.S. Patent and Trademark Office by Carnegie Mellon University.

**Sponsored by the U.S. Department of Defense
© 2003 by Carnegie Mellon University**

Report Documentation Page			<i>Form Approved OMB No. 0704-0188</i>	
<p>Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.</p>				
1. REPORT DATE 25 FEB 2003	2. REPORT TYPE	3. DATES COVERED 00-00-2003 to 00-00-2003		
4. TITLE AND SUBTITLE CMMI Appraisal Results		5a. CONTRACT NUMBER		
		5b. GRANT NUMBER		
		5c. PROGRAM ELEMENT NUMBER		
6. AUTHOR(S)		5d. PROJECT NUMBER		
		5e. TASK NUMBER		
		5f. WORK UNIT NUMBER		
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Carnege Mellon University, Software Engineering Institute, Pittsburgh, PA, 15213		8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)		
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)		
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited				
13. SUPPLEMENTARY NOTES presentation from the Software Engineering Process Group Conference (SEPG 2003), 24-27 February, Boston, MA.				
14. ABSTRACT				
15. SUBJECT TERMS				
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 23
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified		



Presentation Objective

Provide a first look in detail at the results of CMMI® based appraisals

Address some questions and concerns regarding the use of CMMI as compared to CMM®

Encourage appraisal reporting



Outline

Demographics of Organizations Reporting SCAMPIsm Appraisals

- Site Type
- First Time vs reappraisal
- Geographical Distribution
- Organizational Size

How are organizations using CMMI?

- Model and Method Use
- Staged vs Continuous
- Model scope alternatives
- Number of projects appraised

What results are being reported?

- Maturity Profile
- Process area satisfaction

Concluding Remarks



Data Description

Data as of Feb 18, 2003

- many year end submissions included
- presentation will be available from
<http://www.sei.cmu.edu/sema>

Selected appraisals based on use of CMMI v1.0 or CMMI v1.1

For results only used SCAMPI v1.1 (Class A) appraisals

And, pulled data on these organizations' most recent SW-CMM when available



Where are the Appraisal Results Coming From?

40 Companies

- 2 appraised 8 organizations
- 1 appraised 5 organizations
- 1 appraised 4 organizations
- 1 appraised 3 organizations
- 8 appraised 2 organizations
- 27 appraised 1 organizations

71 Organizations

• Commercial	29
• DoD Contractor	22
• Civil Contractor	8
• Military Org	8
• Civil Org	2
• In House Dev	2



Appraisal History

50 organizations had not reported any prior assessments before using CMMI

- 24 used CMMI v1.0
- 26 used CMMI v1.1

21 organizations were reappraised and the prior appraisal used the following models

- 14 used CMM v1.1
- 1 used SA-CMM
- 6 used CMMI v1.0



Geographic Distribution of Appraisal Results

Countries

• USA	34
• Japan	13
• Australia	8
• France	4
• India	4
• United Kingdom	2
• Taiwan	2
• Denmark	1
• Russia	1
• South Korea	1
• Switzerland	1



Outline

Demographics of Organizations Reporting SCAMPI Appraisals

- **Site Type**
- **First Time vs reappraisal**
- **Geographical Distribution**
- **Organizational**

How are organizations using CMMI?

- **Model and Method Use**
- **Staged vs Continuous**
- **Model scope alternatives**
- **Number of projects appraised**

What results are being reported?

- **Maturity Profile**
- **Process area satisfaction**

Concluding Remarks



Model and Appraisal Method Use

	CMMI v1.0	CMMI v1.1	Total
SCAMPI v1.1	3	33	36
SCAMPI v1.0	32	5	37
SCE	4		4
Total	39	38	77

Note: the 71 organizations account for 77 CMMI based appraisals

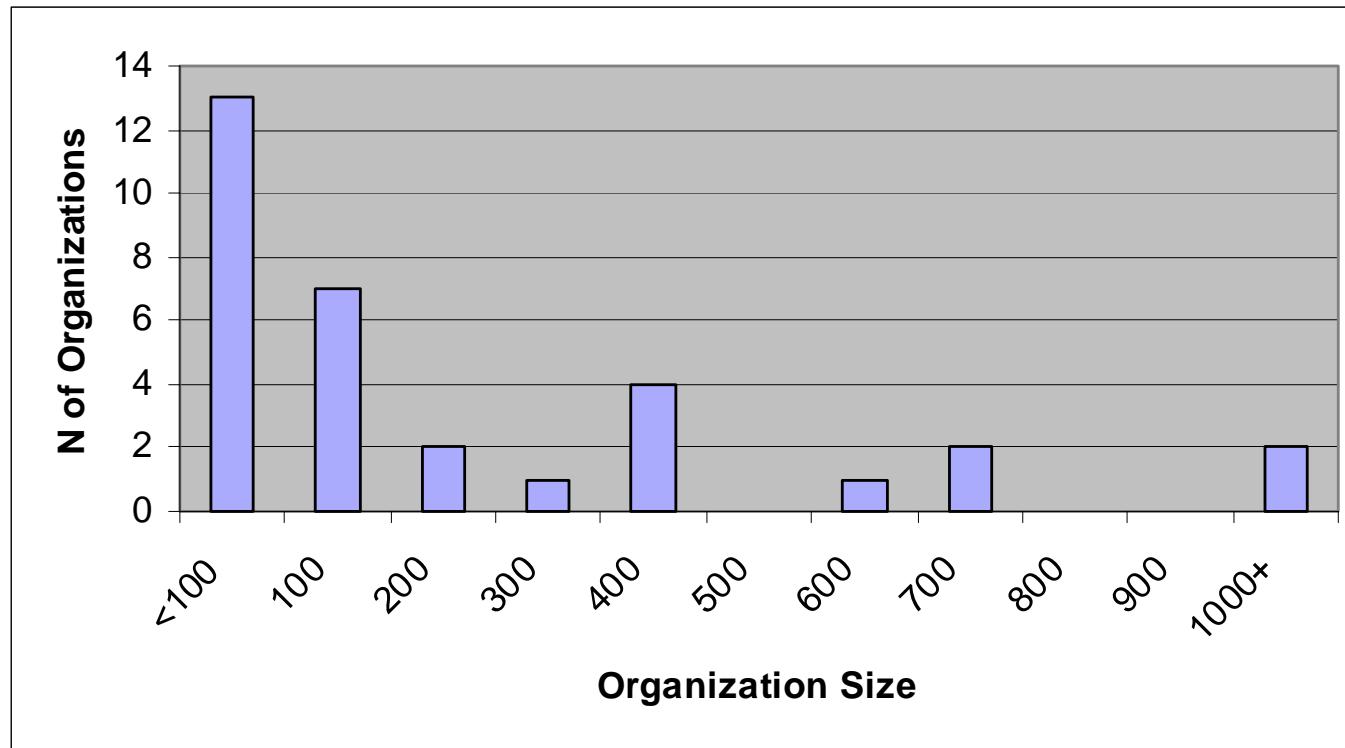


Model Scope and Representation

Scope	Staged	Continuous
SW + SE	14	6
SW + SE + IPPD	1	
SW + SE + IPPD + SS		
SW + SE + SS	3	1
SW	3	1
SE	2	2



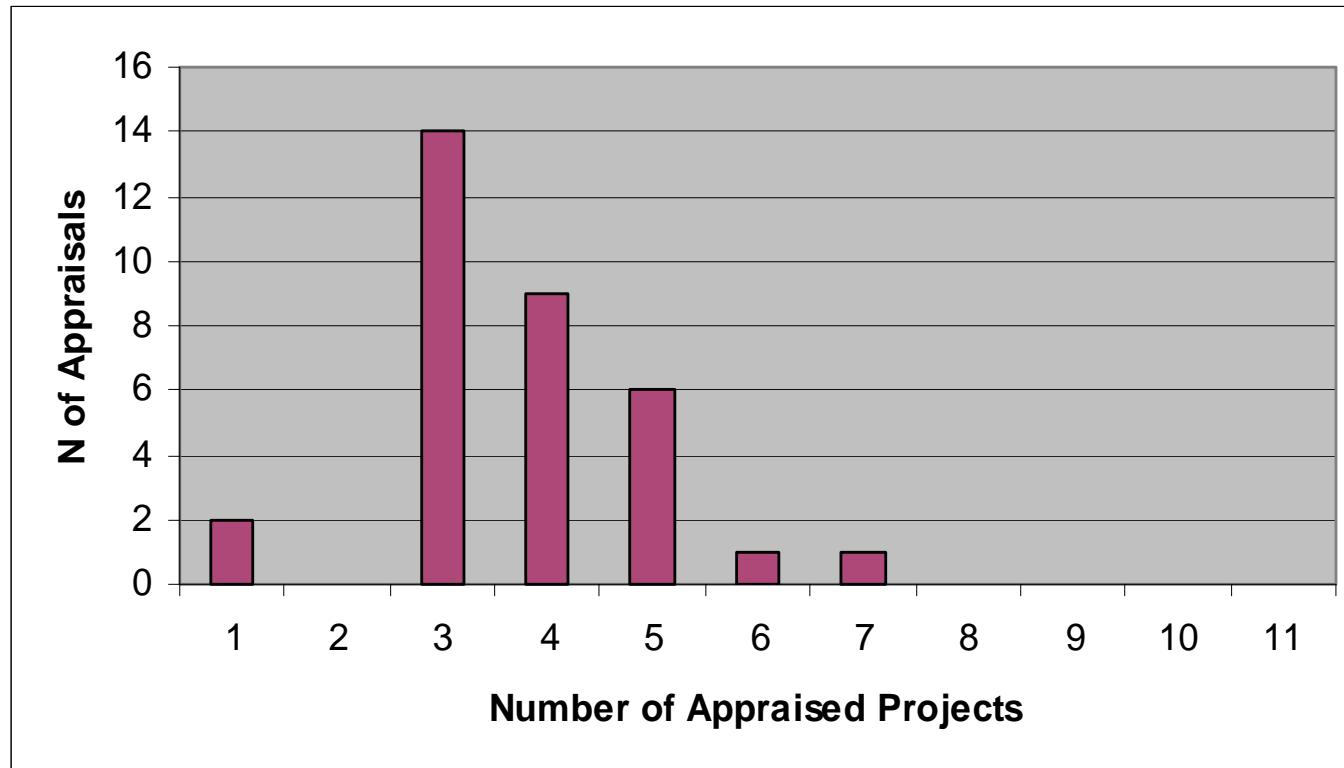
Organization Size



N = 32



Number of Projects Appraised



$N = 33$



Observation: Selected Architecture and Sequence of Appraisals

In the few instances of repeated use of the models, the sites used the same representation for all appraisals.

However, some indication of using SCAMPI A method with the continuous representation to perform a “gap analysis” prior to a SCAMPI A using the staged representation.



Outline

Demographics of Organizations Reporting SCAMPI Appraisals

- **Site Type**
- **First Time vs reappraisal**
- **Geographical Distribution**
- **Organizational Size**

How are organizations using CMMI?

- **Model and Method Use**
- **Staged vs Continuous**
- **Model scope alternatives**
- **Number of projects appraised**

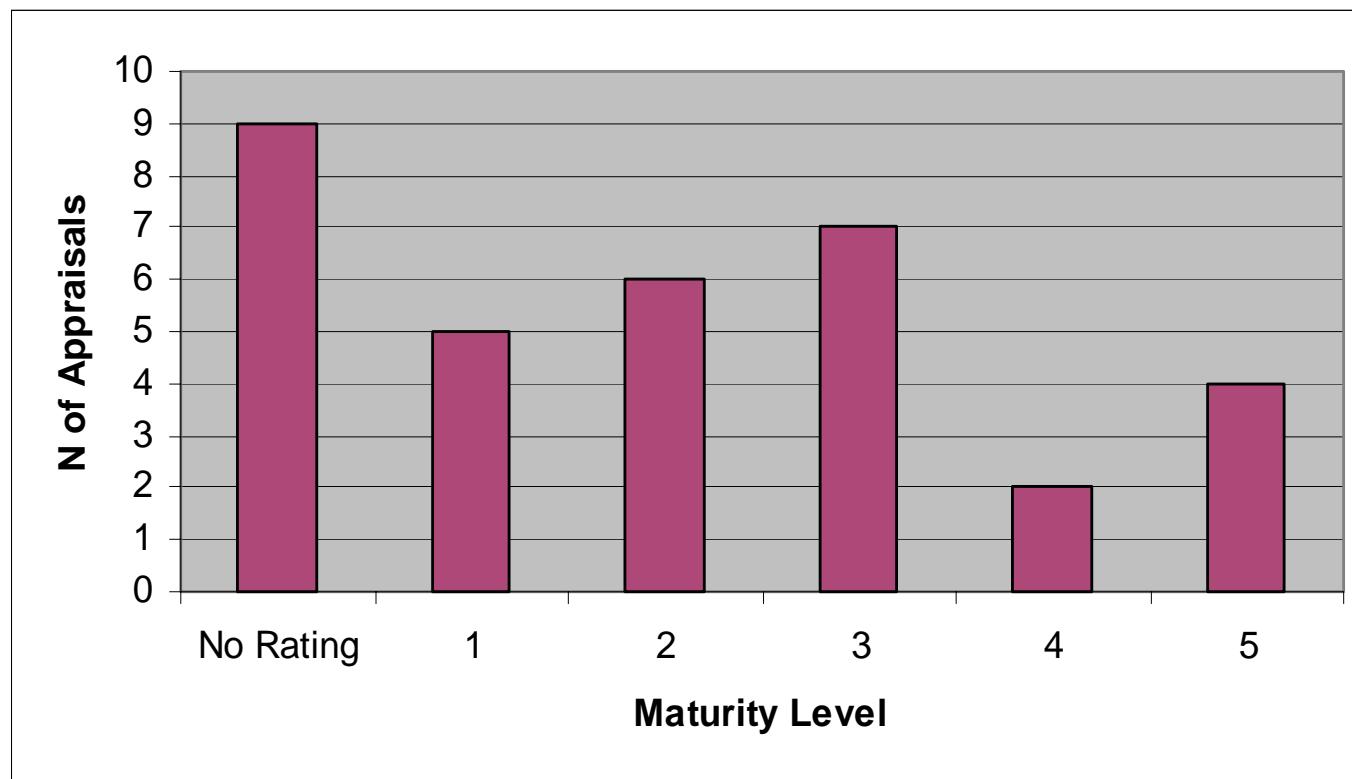
What results are being reported?

- **Maturity Profile**
- **Process area satisfaction**

Concluding Remarks



Maturity Profile - All CMMI v1.1, SCAMPI v1.1



N = 33



Maturity Profile – 2

Maturity Level	First Time Reports	Reappraised Organizations
No Rating	8	1
1	5	
2	5	1
3	4	3
4	2	
5		4



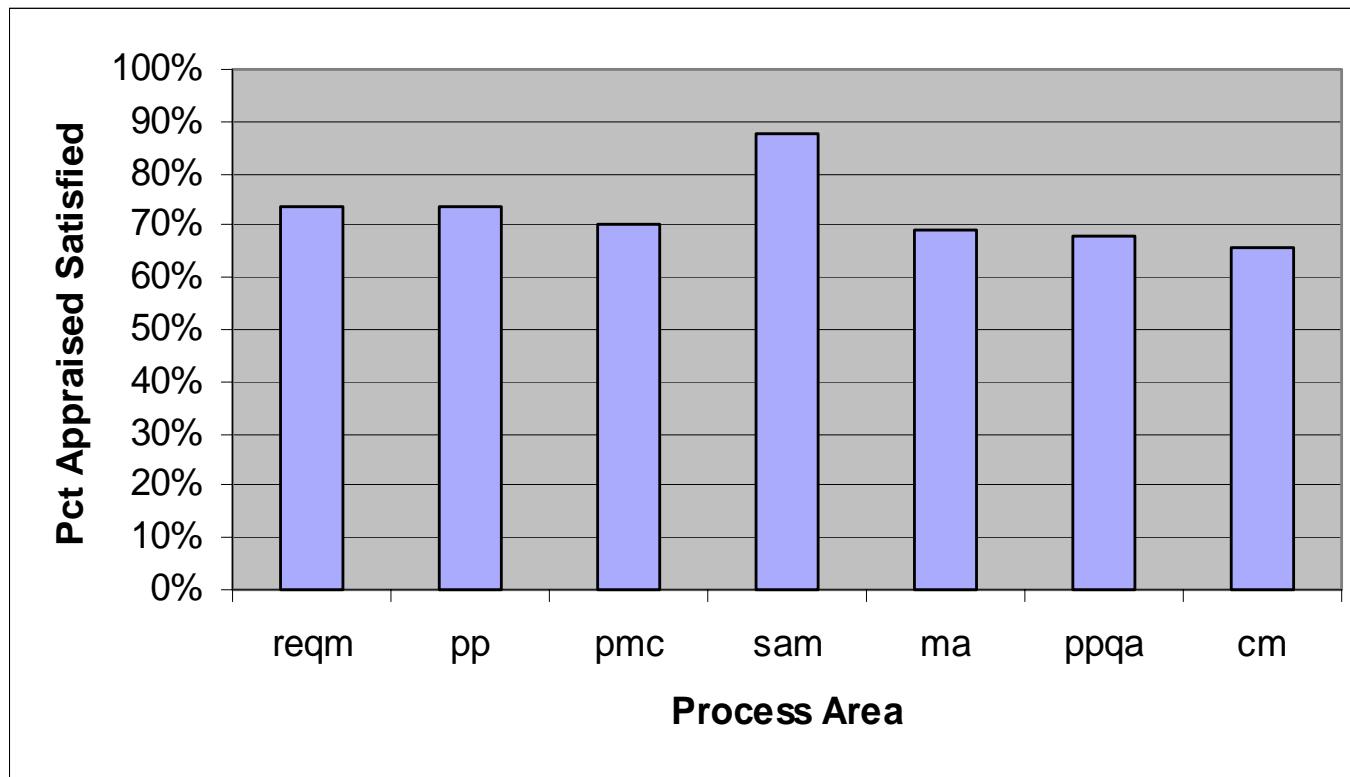
Change in Maturity Level Rating

Current Maturity Level

Prior Maturity Level	1	2	3	4	5
1					
2				1	
3		1	2		1
4					3
5					

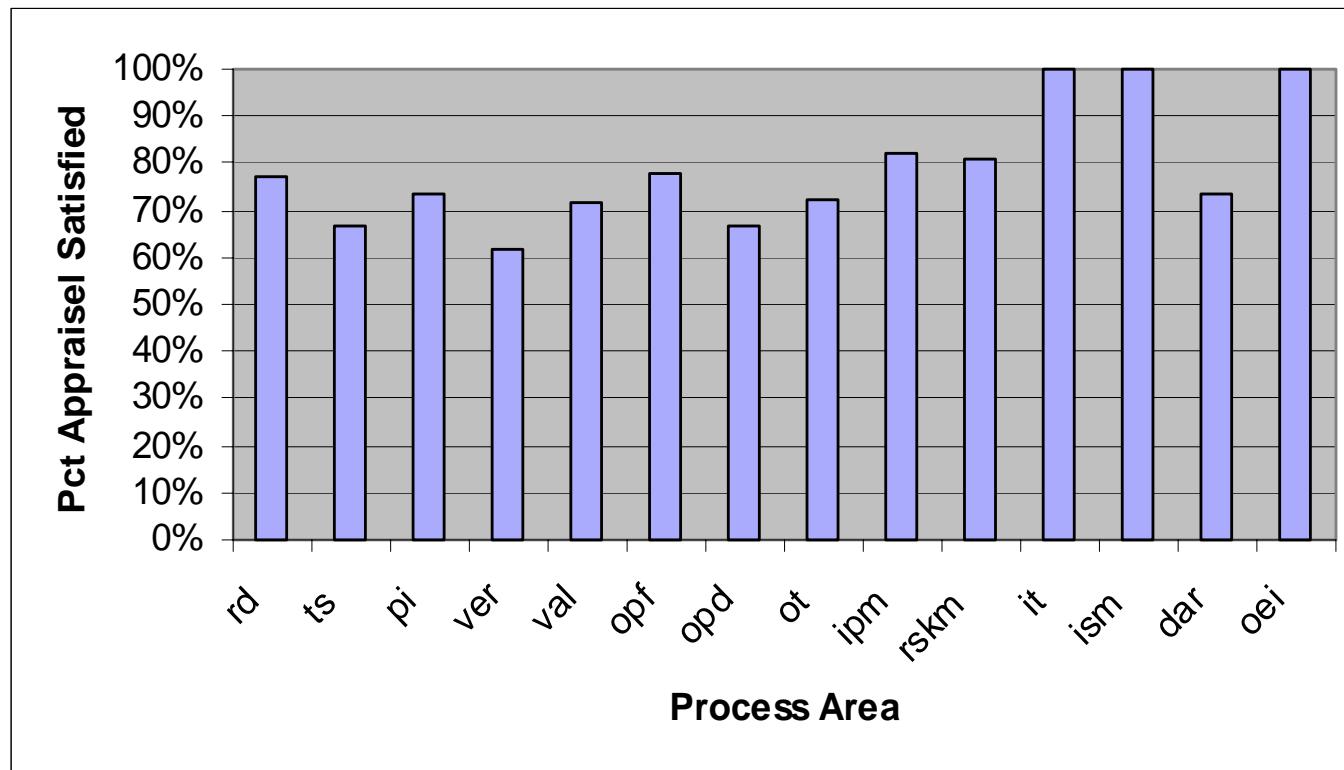


Process Area Satisfaction – ML2



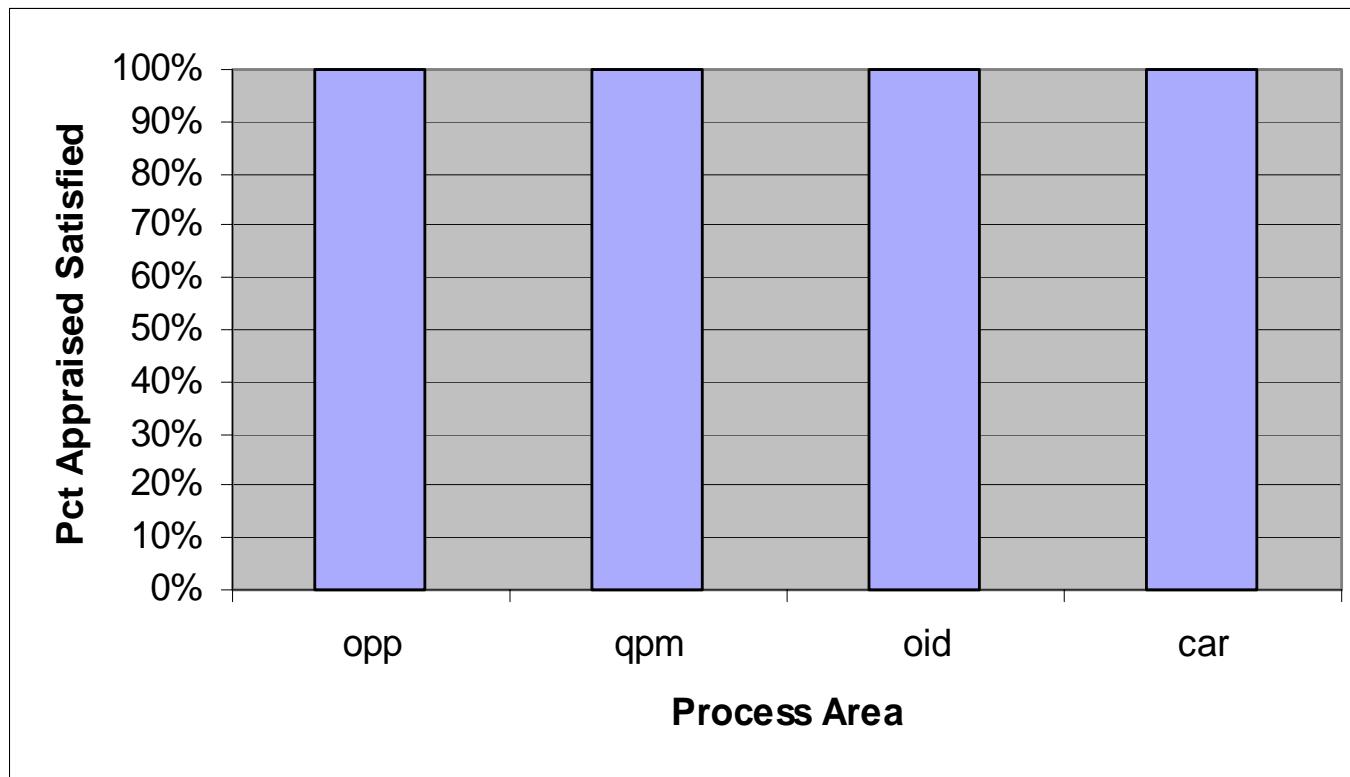


Process Area Satisfaction – ML3





Process Area Satisfaction – ML4&5





Concluding Remarks

Has the bar been raised?

- New process areas do not seem to be appraised as unsatisfied more frequently than other process areas
- New process areas are not being “avoided”

Model Scope

- Organizations seem to mostly be using the Software and Systems Engineering scope
- But, note that other alternatives are being used and each discipline has been used



What's Next?

CMMI Community Process Profile

- **Based exclusively on SCAMPI A v1.1 and CMMI v1.1**
- **Will include staged and continuous results**
- **Will be published twice a year**

Additional Data Collection

- **Start to collect B and C data**



Questions and Contact Info

Dave Zubrow

dz@sei.cmu.edu

412-268-5243

To submit Appraisal Packages

pais@sei.cmu.edu

To check for new forms

<http://www.sei.cmu.edu/sema/packet.html>